Modular greenhouses, garden sheds, outdoor garden elements and accessories
Designed and manufactured by Rion
A Member of the Plasson Group

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<tbody>
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</tbody>
</table>
Safety First

- Check the contents of the greenhouse packaging against the packing list and the required parts for your model on page 4 and following. **Do not begin assembly if any parts are missing.**
- Please read these Assembly Instructions completely before assembly and keep them in your records so you can refer to them if you wish to add options or make repairs.
- The instructions in this manual lead you through each step in the assembly process. It is important for you to follow them closely.
- We recommend that you use gloves during assembly.
- Rion is not responsible for the misuse of tools or parts.
- If local building codes require permits or licenses make sure that they are acquired before beginning.
- Your Greenhouse should be securely anchored to the prepared foundation or the Modular Base (available as an option) using the recommended hardware.
- If you prepare a concrete foundation do not excavate and pour concrete in frozen ground.
- Exercise caution when lifting heavy assemblies.
- Do not attempt to assemble your Greenhouse in high winds.
- We recommend that you place your Greenhouse in a spot where it will receive direct sunlight and will be protected from the wind as much as possible. The door should not face prevailing winds.
- When your Greenhouse is fully assembled examine it for sharp edges and trim with a razor knife if necessary.
- Close all roof vents in high winds.
- It is important to clear your Greenhouse of snow in the winter.
- Make sure that the temperature in the greenhouse never exceeds 70° C (155° F). Ensure good ventilation during hot days or provide a shading screen. This is especially important if you live in a hot climate.

**Required Tools**

Before you start assembly have the following available:

- Measuring tape
- Spirit level
- Scissors
- Gloves
- Razor knife

**Note:** You may find some parts easier to assemble if you first moisten them with soapy water.

**Concrete Foundation**

- 70 mm x 6 mm (2 3/4" x 1/4") screws and concrete anchor set or expansion anchor. (See quantities on page 3.)
- Hammer
- Power drill and appropriate masonry bit
- Screwdriver for screws or wrench for expansion anchors. A power tool with the appropriate bit is recommended.

**Note:** If you have purchased a Modular Base all hardware is included.

**Accessories**

- Your Greenhouse comes with two roof vents. Additional roof vents (Part WIN33AC) are available as an option.
- A Modular Base can be purchased for your Greenhouse’s foundation.
Introduction

Congratulations on purchasing a Rion Greenhouse. We are certain that it will give you many happy years of pleasure in your garden.

The drawings in this manual are designed for the greenhouse owner who has purchased a GH44, which consists of one front unit (GH40A), and one back unit (GH40B). If you have purchased additional modules the instructions are indicated in the text.

The Greenhouse has been designed to be as easy to put together as it is beautiful to look at. Most of the work can be done by a single person. Only attaching the roof requires the help of a family member or neighbor for a short while.

Easy assembly methods eliminate the need for tools or special expertise.

1. Connect the specified parts.
2. Match the holes in the profiles and the connectors. Place a pin on the pin tool and push the pin through the lined-up holes to lock the parts in place. Many connections require pins on both sides.

**Note:** Extra pins are included.

3. If you wish to disassemble the parts at any time, remove the pins using the pin tool. Place the end into the exposed hole and lever the pin out.
4. If a hole in the connector is missing, drill a hole with a 6 mm (¼") drill bit through the assembled profile and then insert the pin.
5. In extremely rare cases connectors will not slip into some round or oval profiles. In this case place the affected part into 10 cm (4") of boiling water for 15 seconds before connecting.

**Note:** In some models profiles have identification stickers. We recommend removing them as you work.

Greenhouse assembly is done in the following steps:

- Prepare a Foundation for Your Greenhouse (page 3)
- Identify Greenhouse Parts (page 4)
- Prepare Your Parts for Assembly (page 7)
- Lay Out the Greenhouse Frame (page 8)
- Secure the Frame to the Foundation (page 9)
- Assemble the Roof Pediments (page 10)
- Assemble Roof Framework (page 12)
- Cover the Greenhouse Roof (page 13)
- Raise the Roof (page 16)
- Cover the Walls (page 17)
- Seal Panels (page 19)
- Assemble the Doors (page 20)
- Hang the Doors (page 21)
- Final Touches (page 22)
Prepare a Foundation for Your Greenhouse

Before assembling your new Greenhouse a proper foundation must be prepared. A number of anchoring options are possible, based on wind and ground conditions in your area. Make sure that you have checked with your local authorities regarding any required building permits.

Decide at this time the final orientation of your Greenhouse. We recommend that you place your greenhouse in a spot where it will receive direct sunlight and will be protected from the wind as much as possible. The door should not face prevailing winds. It is important to clear your Greenhouse of snow in the winter.

Modular Base (Option)

If you have purchased the optional Greenhouse Modular Base follow the assembly instructions in the packaging. The Greenhouse Modular Base can be placed in an excavated hole or on the ground. In either case you will require sufficient gravel, earth or other suitable material to fill the base (see table below). All required hardware is included.

Treated Wood Base

Build a framework composed of 4 × 6 (1) and 2 × 12 (2) treated lumber using deck screws or galvanized lag bolts and fill it with gravel or earth or other suitable material to fill the base up to the top surface of the 4 × 6 (1). Attach the greenhouse frame through the connectors using screws that are 6 mm (¼") in diameter and no less than 70 mm (2¾") long (not supplied).

Concrete Foundation

Prepare a poured concrete foundation according to local building codes. Do not excavate and pour concrete in frozen ground. Make sure that there is a slight slope for drainage.

Pour your foundation according to the size of the greenhouse model you have selected. Make sure that the foundation is at least 10 cm (4") larger than the size of the greenhouse. The Greenhouse is secured to the concrete foundation using screws and concrete anchors or expansion anchors (not supplied). Use screws 6 mm (¼") in diameter and no less than 70 mm (2¾") long. A drill with an appropriate masonry bit is required.

Other Foundation Options

Wood Deck

Your Greenhouse can be secured to a wood deck with screws (not supplied) through the frame connectors. Use screws that are 6 mm (¼") in diameter and no less than 70 mm (2¾") long. Make sure that the wood deck itself is securely anchored to the ground. See hardware quantities and foundation measurements above.

Excavated Trench

Your Greenhouse can be placed in an excavated trench to anchor it to the ground. See the foundation measurements above for dimensions.

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**Model** | **Base Width** | **Base Length** | **Fill Quantity** | **Screw/Lagbolts**
---|---|---|---|---
GH44 | 2.65 meter (8’ 8") | 2.65 meter (8’ 8") | 0.68 cubic meters (24 cubic feet) | 20
GH46 | 2.65 meter (8’ 8") | 3.90 meter (12’ 9") | 1.02 cubic meters (36 cubic feet) | 28
GH48 | 2.65 meter (8’ 8") | 5.14 meter (16’ 10") | 1.36 cubic meters (48 cubic feet) | 36

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**Model** | **Modules** | **Foundation Width** | **Foundation Length** | **Screw/anchor set or expansion anchor**
---|---|---|---|---
GH44 | GH40A++GH40B | 2.70 meter (8’ 10") | 2.70 meter (8’ 10") | 20
GH46 | GH40A++GH40B | 2.70 meter (8’ 10") | 3.95 meter (12’ 11") | 28
GH48 | GH40A++GH40B | 2.70 meter (8’ 10") | 5.20 meter (17") | 36

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Note: You may assemble the greenhouse on its base on a hard surface and move it to its final position when you have finished. Make sure that there are no obstructions between the assembly area and the final position.
Identify Greenhouse Parts

Because of the Greenhouse modularity, you may purchase additional GH40M modules to fit your needs.
Take a minute to make sure you have everything you need.

**Note:** Do not proceed with assembly if any parts are missing.

The part code is stamped on each connector. Profiles are listed in order by size, largest to smallest. Panels are identified with stickers.

Exact dimensions can be found in the packing list.

The drawings in this manual are designed for the greenhouse owner who has purchased a GH44, which consists of one front unit (GH40A), one back unit (GH40B) and . If you have purchased additional modules the instructions are indicated in the text.

<table>
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<th>GH44</th>
<th>GH46</th>
<th>GH48</th>
<th>Description</th>
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<td>Right Rib Connector</td>
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<td>7</td>
<td>Middle Cap</td>
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<td>PN1</td>
<td>14</td>
<td>18</td>
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<td>PN2</td>
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<td>Lower Roof Panel - (60.5 x 66.7 cm)</td>
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<td>Door Panel (bottom) - (57.1 x 118.7 cm)</td>
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<td>Front Pediment Strengthening Bar</td>
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**GH40 Greenhouse Assembly Instructions**
Prepare Your Parts for Assembly

Remove everything from your packages and sort them according to part type. Since assembly is done from taking parts from every box, it is best to put everything together. The boxes are printed with a ruler to help you distinguish between profiles.

Note: Protect unassembled panels from the sun to prevent identification stickers from adhering to the glazing.
Lay Out the Greenhouse Frame

Decide in which direction the door will face and place the parts on the prepared foundation or wood deck.

**Note:** If you are using a modular base or other foundation option (see page 3) assemble the base on a flat surface (such as a driveway or a garage) and then move it into position when you are done.

1. Slide the SR1 profiles into the two B2 frame profiles that will be used for the doorway.
2. Place the two prepared B2 frame profiles on either side of the 15 connector.
3. Place a 2D connector on both sides.
4. Place the other parts of the frame in place and push them together. Make sure that the channel of the 2D connectors faces outward. Each base connector is stamped with an arrow pointing to the outside direction.
5. Lock the frame together with pins.

6. Make sure that the frame is perfectly rectilinear by measuring the diagonals and verifying that they are the same.

7. Use a spirit level to make sure that the frame is level.
Secure the Frame to the Foundation

Make sure you have the proper hardware before beginning this step. (See page 3.)

**Note:** If you are using a modular base and filler you may assemble the greenhouse on a hard surface and move it to its final position when you have finished. Make sure that there are no obstructions between the assembly area and the final position.

**Concrete Foundation**

1. Mark the foundation through each connector using a scribe or screw.
2. Carefully move the frame and then drill holes using an appropriate masonry bit. Insert concrete anchors or expansion anchors (not supplied) in each hole.
3. Move the frame back into place. Make sure that it is still perfectly rectilinear. Secure the screws/anchors in place.

**Modular Base, Wood Deck, or Treated Foundation**

Insert screws into the frame connector holes and secure them to the base.

**Note:** If you have purchased the Modular Base all necessary hardware is included.
Assemble the Roof Pediments

1. Put ST7 couplers on the PN8R and PN8L pediment panel halves as shown. The tops of each coupler are trimmed to match the angle of the panel.

Note: The outside surface of the panels have special UV protection, indicated by the logo and the plastic identification strip. Remove plastic ID strips when as panels are locked in place.

2. Slide the two pediment panel halves together.
3. Assemble all parts of the front pediment except for the 7A connector and the R8 profile. Take care that the internal metal strengthening bar in the E12 profile remains in place.
4. Slide the assembled PN8R/PN8L pediment panel into the open space of the pediment.
5. Complete the front pediment with the 7A connector and the R8 profile, taking advantage of the flexibility of the profiles.
6. Lock the pediment in place using pins and remove the ID strips from the panels.

Complete Doorway Pediment

1. Attach the E4R and R2 profiles to the lower right pediment. The E4R profile has a sticker indicating the up direction.
2. Slide the PN5R panel in place. Make sure that the plastic ID strip faces out.
3. Connect the 4A and 09 connectors to an E2 profile and put it in place taking advantage of the flexibility of the profiles.
4. Lock the panel with pins.
5. Assemble the lower left pediment in the same way. Note the “UP” sticker on the E4R profile.
6. Remove the ID strips from the panels.
**Back Pediment**

1. Put ST7 couplers on the PN8R and PN8L pediment panel halves with the ID plastic strip facing outside. The tops of each coupler are trimmed to match the angle of the panel. Slide the two pediment panel halves together.

2. Assemble all parts of the back pediment except for the 7A connector and the R8 profile and slide the assembled PN8R/PN8L pediment panel into the open space of the pediment. Complete the back pediment, taking advantage of the flexibility of the profiles.

3. Lock the pediment in place using pins and remove the ID strips from the panels.

4. Slide two GSC10 strengthening bars into both sides of a 10 connector, one in the upper section and the other in the lower section. They will overlap inside the connector and their ends will be flush with the far end.

5. Slide two E2 profiles over the GSC10 strengthening bars. The ends of the strengthening bars will extend beyond the E2 profiles.

6. Complete the back pediment support with the 10 connectors, E2 profiles and 4A and 3A connectors as shown.

7. Put the remaining profiles on the back pediment top.

8. Slide the back pediment panels in as shown. Make sure that the plastic ID strip faces the outside.

**Note:** If you have purchased one or more optional Louvered Windows insert them instead of the PN9 panels.

9. Put the back pediment support in place, taking advantage of the flexibility of the profiles.

10. Lock everything into place using pins and remove the ID strips from the panel.
Assemble Roof Framework

**Note:** Assemble the roof in an area not too far away from the completed base.

1. First assemble the first arch.
2. Slip one end of the CAB40 cable through the 6 mm (¼”) channel on the underneath side of the 5A connector. You may use the GT1 pin and glazing tool to assist you. **The cable does not go through the central hole of the connector.**
3. Screw an AS70 screw using the AW5 Allen wrench through the CAB40 cable and the pin holes in both sides of the connector.
4. **Note:** The end of the screw should not extend beyond the outside channel of the E2 profile so it won’t interfere with the placement of the RB1 glazing element (page 13).
5. Repeat the previous two steps for the 5A connector on the other side of the arch.
6. Lock the parts in place using pins.
7. Repeat steps 1 through 5 for the rest of the arches according to the number of GH40M modules you have purchased.

7. Grasp the center of each CAB40 cable with the Hook1 Top Catch and slide it into the top 5A connector as shown.
8. Add E2 profiles to the front pediment and lock the parts in place using pins.
9. Add E2 profiles to the completed ribs according to the number of modules you have purchased and lock them into place with pins.
10. Complete the roof by attaching the back pediment. Lock it into place with pins.
Cover the Greenhouse Roof

1 Step in the framework of the lower window to reach the top of the roof conveniently.

2 Place RA1 glazing elements on the top of the roof by placing one end in the top channel and pushing it down along the length of the profile.

3 Place RB1, RB4, and RB6 glazing elements along the arches where shown. Place one end of the RB elements in the channels of the profiles and slide them down the length of the profile.

Note: If you have difficulty inserting the top of the RB1 glazing element slightly loosen the AS70 screw holding in the CAB40 cable.

4 Tighten the AS70 screws holding the CAB40 cables with the AW5 Allen wrench.
1. Place RD1 elements where shown by placing one end in the channel and pushing it down along the length of the profile.

**Note:** You may find it easier to insert RD elements into profiles by pushing them in from the top while rolling the element downwards.

2. Place the PN40 panels and the PN40A side panels in place by sliding one corner into the RD1 glazing element. Continue until they are fully inserted.

3. Remove the ID strips from the panels.

4. Assemble the two WINH31 handles to each WIN33 Roof Vent using the included pins.

5. Insert the Roof Vents by sliding one corner into the RD1 glazing element. Continue until they are fully inserted.

6. After assembling a WIN33 window handles trim 6 mm (¼") from each side with a razor knife or hacksaw.

7. Remove the cut portion.

**Note:** Additional Roof Vents are available as an option.

**Caution:** Close windows in high winds. Automatic window openers are available as an option.